Research Center on Alpine Environment

ToolMap User Manual

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©CREALP Draft date April 13, 2012

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Chapter 1

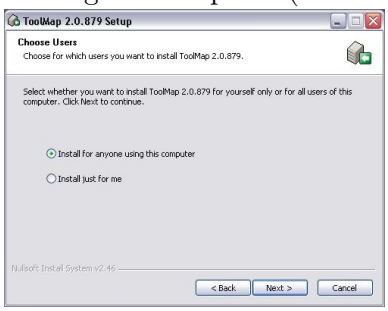
Installation

1.1 Windows

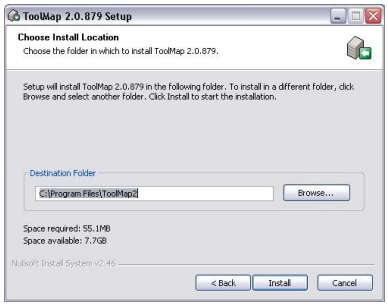
The installation of ToolMap is rather simple. First you have to download the windows installer. It can be found on our web site http://www.crealp.ch/fr/toolmap-telechargement.html. The setup wizard will then guide you through the installation process.

ToolMap 2.0.879 Setup
Welcome to the ToolMap 2.0.879 Setup Wizard
This wizard will guide you through the installation of ToolMap 2.0.879.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
TOOLMAP
Next >
Cancel

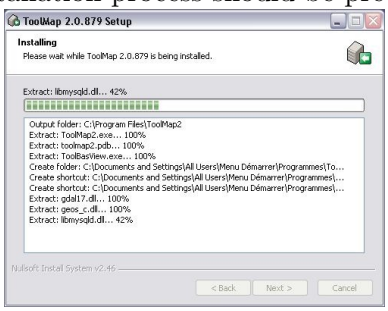
Choose whether you want to install ToolMap only for yourself or for all users using the computer (administrator privilege required).


ToolMap 2.0.879 Setup
Choose Users
Choose for which users you want to install ToolMap 2.0.879.
Select whether you want to install ToolMap 2.0.879 for yourself only or for all users of this computer. Click Next to continue.
Install for anyone using this computer
Install just for me
Nullsoft Install System v2.46
< Back
Next >
Cancel

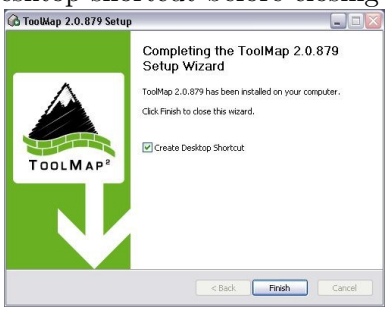
Once you have activated the next step, the wizard will generate a default destination folder for the installation; you can, of course, change the destination folder.


ToolMap 2.0.879 Setup
Choose Install Location
Choose the folder in which to install ToolMap 2.0.879.
Setup will install ToolMap 2.0.879 in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder
C:\Program Files\ToolMap2
Browse...
Space required: 55.1MB
Space available: 7.7GB
Nullsoft Install System v2.46
< Back
Install
Cancel

If you click on the [install] button, the installation will begin. Otherwise you can go back to change settings or simply cancel the operation. If you decided to launch the installation, a progress window will pop up. The installation process should be pretty fast.



Once the installation has been completed you'll have the choice to create a desktop shortcut before closing the setup wizard.



ToolMap can now be launched using either the desktop icon or the menu entry located in Programs → ToolMap2 → ToolMap

1.1.1 Silent Installation

ToolMap may also be installed without requiring the user to select options or click next. This mode, also called unattended installation, may be particularly useful for system administrator trying to deploy ToolMap on multiple computer without the hassle to go through all the wizard pages.

Installing The following command line may be used for the silent installation of ToolMap:

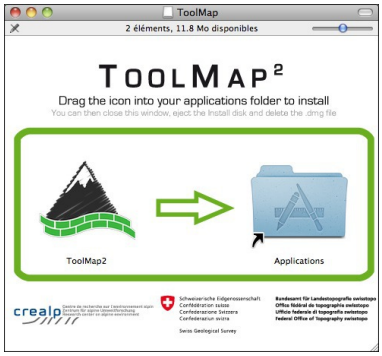
InstallToolMap_d967.exe /S /INSTDIR="C:\Program Files\ToolMap2" /AllUsers

- **/S:** inform the installer to be silent
- **/INSTDIR:** Path for installing ToolMap
- **/AllUsers** (or **/CurrentUser**): Install ToolMap for all users (administrator privilege required) or for the current one only.

Uninstalling The following command line may be used for uninstalling ToolMap silently:
"C:\Program File\ToolMap2\uninst.exe" /S

1.2 Mac OSX

Download the ToolMap's .DMG file from http://www.crealp.ch/fr/toolmap-telechargement.html, then double-click on it. A new Finder window similar to the one illustrated bellow should appear.



Drag the ToolMap icon into the "Applications" folder to install ToolMap. Once ToolMap is installed, you can safely eject it's disk image. Click on the ToolMap disk icon on the Desktop and then press CMD-E.

Delete the .DMG file by dragging it to the trash.

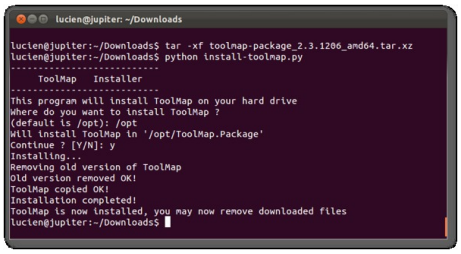
1.3 Linux

ToolMap is currently distributed as a CDE Package (). This method eliminates dependency problems and thus allows ToolMap to run on any modern Linux.

These packages are compressed into tar.xz archives. To install them proceed as follows:

1. Extract the package using the following command: **tar -xf toolmap-package_2.3.1206_amd64.tar.xz**

2. Then use the following command to install ToolMap: **python install-toolmap.py**

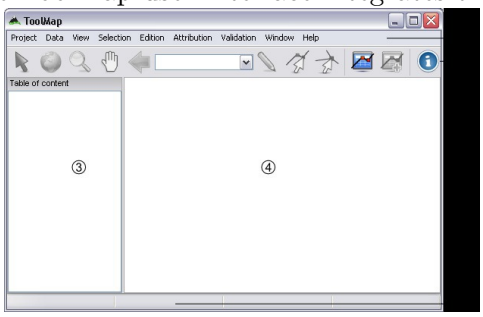

lucien@jupiter: ~/Downloads
lucien@jupiter:~/Downloads$ tar -xf toolmap-package_2.3.1206_amd64.tar.xz
lucien@jupiter:~/Downloads$ python install-toolmap.py
ToolMap Installer
This program will install ToolMap on your hard drive
Where do you want to install ToolMap ?
(default is /opt): /opt
Will install ToolMap in '/opt/ToolMap.Package'
Continue ? [Y/N]: y
Installing...
Removing old version of ToolMap
Old version removed OK!
ToolMap copied OK!
Installation completed!
ToolMap is now installed, you may now remove downloaded files
lucien@jupiter:~/Downloads$

Once ToolMap installed, you can delete downloaded files

Chapter 2

User Interface Overview

The ToolMap user interface integrates the following elements:



1. Menu bar
2. Toolbar
3. Table of contents
4. Visualization and editing window
5. Status bar

2.1 Menu bar

In the menu bar ten menus are available, each of them will lead you to different options:

1. **Project**: This menu contains all options related to the project management.
2. **Data**: This menu allows the user to add or import support data into the project.
3. **View**: The view menu contains all options for navigating and zooming into the displayed data.

4. **Selection**: This menu contains tools for managing the selection.
5. **Edition**: All tools related to the editing process are located into this menu.
6. **Attribution**: This menu contains the tools used when attributing datas.
7. **Validation**: This menu contains the tools used to check the objects and layers before exportation as well as the *Statistics...* tool.
8. **Window**: windows management.
9. **Help**: The Help Menu provides various help functions as well as options for reporting a bug.

2.2 Toolbar

The toolbar is accessible on top of the application window, right under the menu bar. It allows to quickly access to the different main tools available in ToolMap. Most of the toolbar buttons are grayed out while no project is open.

2.2.1 Selection tool

- Select one or several geometrical objects

2.2.2 Navigation tools

- Zoom to the maximum extent of all visible layers
- Zoom in or out into the visualization window
- Pan the view in any direction
- Go back to the previous zoom extent

2.2.3 Edition tool

- Draw a new object
- Modify an existing object
- Modify shared node

2.2.4 Attribution tools

- Display the Object kind panel
- Display the Object attribute window

2.2.5 Information tool

- Display the identification window

2.2.6 Scale

-

Drop-down menu of available scales. User defined scale can be set using the Project → Edit → Settings menu

2.3 Table of Content

The table of contents shows a list of all the layers loaded in the project. It looks like the following:

1. Construction layers, they are automatically generated at the creation of the project and can be edited. They are displayed using a bold font.
2. Support Themes, they cannot be edited.

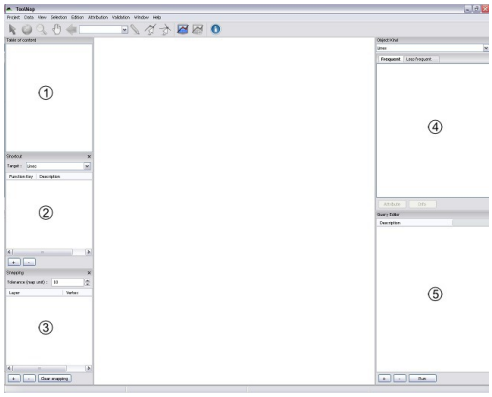
2.4 Status bar

The status bar at the bottom of the application window provides additional informations like geographical coordinates or the number of features selected.

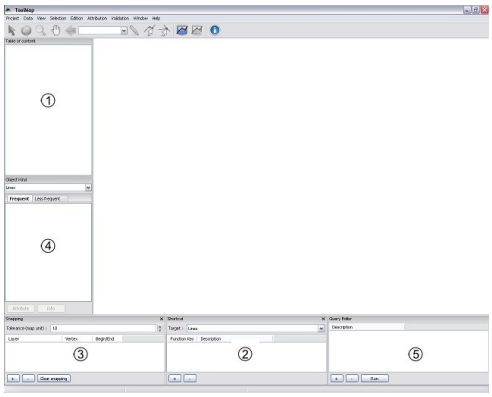
2.5 Layouts

You can access Toolmap's different layouts using the *Layout* option of the *Window* menu. These allow you to use three different kinds of windows disposition :

- The *Default* layout, which is the one you get when first launching Toolmap. This is the one displayed in the User Interface Overview above.
- The *Vertical* layout, which includes all the useful windows in a vertical display.



- The *Horizontal* layout, which includes the same windows than the *Vertical* layout but do so in the left border and the bottom of the display window.



You can freely close any of the tab you wish using the corresponding menu or reorganise your tabs by clicking and droping them where you want them to be. ToolMap will then remember your new custom layout and display it when you launch it.

You can switch back to one of the three base layouts anytime by simply selecting them again in the *Window* menu.

2.6 keyboard shortcuts

Keyboard Shortcuts have been set to the most used functions to make the use of Toolmap easier/quicker.

Under Mac OSX, Ctrl is replaced by the standard CMD(Cmd) button.

2.6.1 Project management

- **Ctrl+N**: Create a new empty project
- **Ctrl+Alt+N**: Create a new project based on a template
- **Ctrl+Alt+O**: Open an existing project
- **Ctrl+S**: Backup the project
- **Ctrl+Alt+S**: Save the project as a template
- **Ctrl+O**: Link data
- **Ctrl+W**: Unlink data

2.6.2 Navigation tools

- **Z**: Zoom tool
- **H**: Pan tool
- **<**: Previous zoom
- **Ctrl+0**: Zoom to the full extent
- **Ctrl+R**: Refresh display

2.6.3 Editor tools

- **D**: Draw a feature
- **M**: Modify a feature
- **Ctrl+T**: Move a shared Node

- **DEL**: Delete the selected objects
- **ESC**: Cancel an edition or modification
- **Ctrl+Z**: Remove the last vertex
- **Ctrl+X**: Activate the line cutter tool
- **Ctrl+V**: Display the vertex positions window
- **Ctrl+F**: Merge the selected lines
- **Ctrl+I**: Create intersections
- **Ctrl+G**: Display the snapping panel
- **ENTER** OR **TAB**: Finish a segment or apply the modifications

2.6.4 Attribute tool

- **Ctrl+A**: Display the Object attribute window
- **Ctrl+Alt+A**: Display the Object attribute window (batch)

2.6.5 Others

- **V**: Selection tool
- **Ctrl+D**: Clear Selection
- **Ctrl+L**: Display the log window
- **Ctrl+Alt+R**: Run the selected query
- **Ctrl+Alt+I**: Display the information Window
- **Ctrl+Y**: Set Orientation tool

Chapter 3

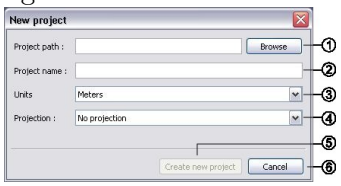
Project Management

The whole management of the project is made with the menu *Project*, which includes the following options:

- **New Project**: create a new project
- **Open...**: open an existing project
- **Recent**: open a recently used project
- **Backup**: create a backup of the project
- **Manage backup**: open the backup management window
- **Save as Template**: save your project as a template
- **Export**: export the project
- **Edit**: edit the project
- **Exit**: quit ToolMap

3.1 New project

To create a new project, select *Project* → *New Project* → *Empty...*. The dialog box illustrated bellow appears.



1. Project Path
2. Project name

3. Units (meters, Kilometers, Lat/Long). Actually this option isn't enabled and projects are allways using meters as their units

4. Projection system (no projection, Swiss projection). Actually this option isn't enabled and only "no projection" is supported.

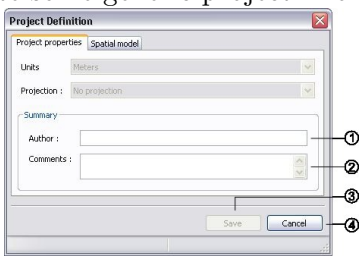
5. Create a new empty project and activate the next step

6. Cancel the creation of the project

ToolMap will not run correctly if the project isn't stored on a local disk

3.1.1 Generalities

The *Project Properties* tab of the Project Definition window allows to complete some generic project informations.



1. Define the author of the project

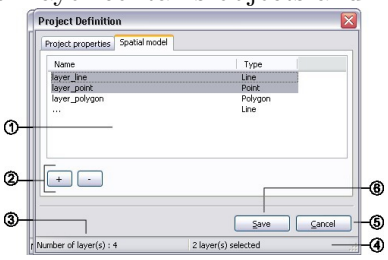
2. Comments about the project

3. Saves the properties modifications of the project (this button is enabled only when at least one layer is created)

4. Cancel the properties modifications of the project

3.1.2 Spatial model

The *Spatial Model* tab of the Project Definition window lists the layers. Each layer contains objects and may have attributes.



1. List of layers defining the spatial model, several operations can be realized in this list:

- Editing the characteristics of a layer by double-clicking on it
- Sorting layers by clicking on the list header
- Reorganizing layers order with a contextual menu

2. Layers management controls

   \+ : add a layer

   \- : delete one or several selected layer(s), the supression can also be made with the **DELETE** or **BACKSPACE** keys.

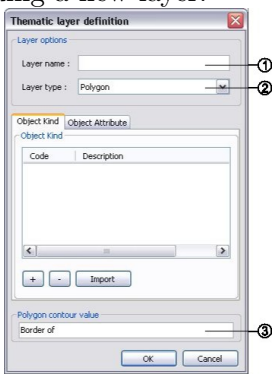
3. Number of layers

4. Number of selected layers

5. Save the project modifications (this button activate only when at least one layer is created)

6. Close the window without saving the modifications.

Layers Definition The Thematic layer definition window appears when adding a new layer:

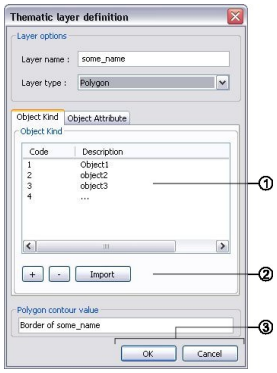


1. Layers name. This name is used as the output file name when exporting the layer.

2. Spatial layer type (line, point, polygon)

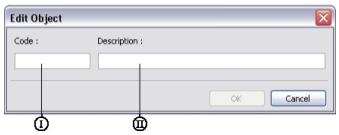
3. Name of the polygon contour. This field is only displayed for polygon layers

Objects definition The objects belonging to a layer are defined in the *Object kind* tab of the Thematic layer Definition window



1. List of defined objects. Following operations can be realized in the list:
   - Sorting objects by clicking on the list header
   - Editing the objects characteristics by double-clicking on an object
   - Reorganizing objects order with a contextual menu
2. Objects management controls

   \+ : Add an object

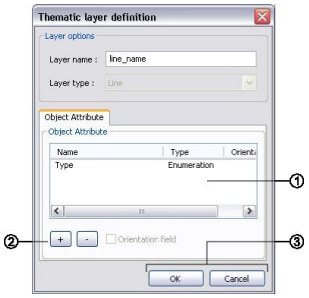
   (a) Code (numerical value) duplicates are allowed but not recommended. This code will be exported as OBJ_CD field when the layer is exported

   (b) Description: a textual description of the object. This value will be exported as OBJ_DESC field when the layer is exported

   \- : Delete one or several selected objects. The suppression can also be made with the **DELETE** or **BACKSPACE** keys.

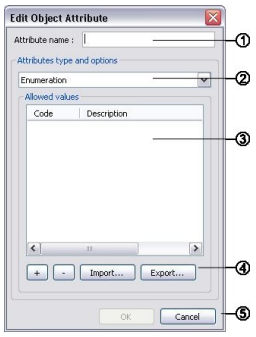
   Import : import list of objects from files of following format:
   - *.CSV Format :<Code>;<Description>;<Theme>;<Frequency>
   - *.TXT Format :<Code>[TAB]<Description>[TAB]<Theme>[TAB]<Frequency>
3. Save or cancel the object modifications

Attributes definition The attributes management is made from the *Attributes* tab of the Thematic layer definition window.



1. List of defined attributes Following operations can be realized in the list:
   - Sort attributes in alphabetical order by clicking on the Name or Type header
   - Edit an attribute characteristic by double-clicking on it
   - Reorganize the list of attributes with the contextual menu by right-clicking
2. Attributes management controls
   + : Add an attribute
   - : Delete one or several pre selected attributes. The suppression can also be made with the **DELETE** or **BACKSPACE** keys.
3. Save or cancel the attributes modifications. An attribute is defined by:
   - A name: the name cannot contain spaces or reserved words (annexe)
   - A type of data:
     - Text
     - Integer
     - Float
     - Date
     - Enumeration

Attribute creation



1. Attribute name
2. Attribute type
3. Attribute options: each type has different options, in this case the enumeration type. Following operations can be realized in the list:
   - Sort the values of the list by alphabetical order by clicking on the Code or Description header
   - Edit values characteristics of the list by double-clicking on it
   - Reorganize the list of values with the contextual menu by right-clicking
4. Enumeration management controls

   \+ : add a new value

   \- : delete one or several pre selected values. The suppression can also be made with the **DELETE** or **BACKSPACE** keys.

   Import : import lists of values, two types of format can be imported:
   - *.CSV Format: <CODE>;<Description>
   - *.TXT Format: <CODE>[TAB]<Description>

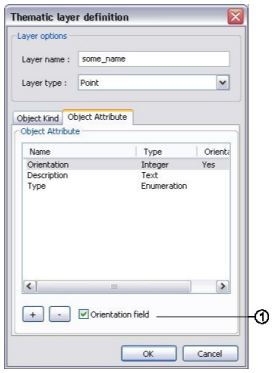
   Export : export the list of values in TXT files
5. Save or cancel the list of values modifications.

Orientation of a point type object It's possible to orientate an object of a layer. However, several constraints have to be considered:

- The spatial type of the layer has to be a Point type
- The data attribute type has to be a Float or an Integer type
- Only one object per Layer can be oriented.

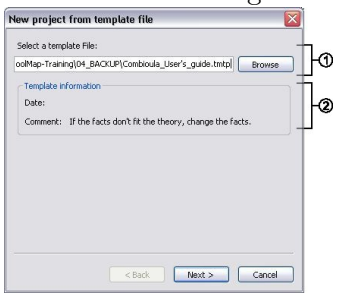
Activation of the orientation

In the *Object Attribute* tab of the Thematic layer definition window, you have to select the attribute by clicking on it, and then activate the case Orientation Field at the bottom of the window(1)(see also attribute orientation to point for further informations).

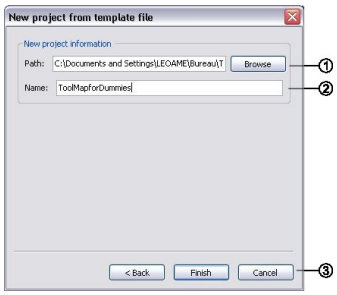


3.2 Create from template

The option *Project* → *New Project* → *From template...* allows you to create a new project with the same layers/objects/attribute as an existing one. This option will create a new project from an existing template. The creation is made through the two following steps:



1. existing template path
2. Informations on the template



1. Directory for the new project
2. Name of the new Project
3. Creation controls:
    - **Back**: Return to the previous window (choose another template)

- **Finish**: Create the new project with the current settings
- **Cancel**: Cancel the creation of the new project

3.3 Open a project

There are two possibilities to open an existing project:

- With the option *Project* → *Open...*: open a project saved on your computer
- With the option *Project* → *Recent*: open a project which had already been opened recently

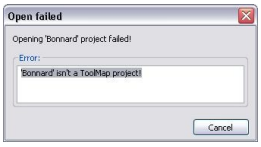
3.3.1 Special cases

- The project do no more exists, it was whether deleted or moved.

Open failed
The project 'Combioula_exercise2' was not found!
It was maybe moved or deleted.
Please try opening another project
Remove this project from recent projects
OK

  - If the box is checked it will automatically erase the project from the list of the recent projects.

- The folder you selected is not a ToolMap file

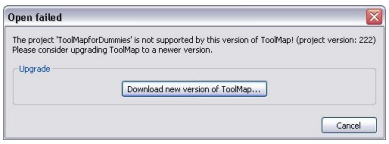


- The project was made on an older version of ToolMap and need to be upgraded

Open failed
The project 'Combioula_exercise2' is no longer supported (version 220).
Would you like to convert it to the newer version (version 221)?
Converted projects can no longer be loaded by previous versions of ToolMap.
Operations
Backup and convert...
Convert only...
Cancel

  - The *backup and convert* option generates a backup of your project in the old version of toolmap and upgrade the current project
  - The *convert only* option simply converts the version of your project. Be aware that your project will no more be readable by older version of ToolMap.

- Your version of ToolMap is not up to date, you'll have to download the latest version


Open failed
The project 'ToolMapforDummies' is not supported by this version of ToolMap! (project version: 222)
Please consider upgrading ToolMap to a newer version.
Upgrade
Download new version of ToolMap...
Cancel

3.4 Edit a Project

The *Edit* option from the menu *Project* allows editing the characteristics and components (layers, objects, attributes, settings) of the current project.

3.4.1 Edit the project properties

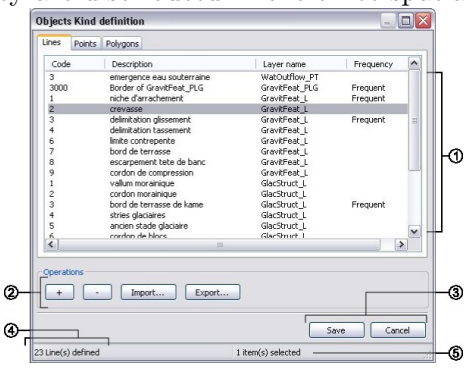
The layers and attributes of the project can be modified with the *Project Definition...* function of the *Edit* submenu.

The first tab *Project Properties* of the window allows modifying the properties of the project like the name of author and the eventual comments. (See chap. Generalities)

The second Tab *Spatial Model* allows modifying the layers (see chap. Spatial model) and the attributes (see chap. Attributes definition).

3.4.2 Edit objects

The objects can be modified with the menu *Project→Edit→Objects kind...* They are distributed in the three spatial kinds: point, line and polygon.



1. List of objects defined by spatial type. Following operations can be realized in the list:
   - Sort objects by alphabetical order by clicking on the Code, Description, Layer or Frequency header.
   - Edit the objects characteristics by double-clicking on it.

- Reorganize the list of objects with the contextual menu by right-clicking.

2. Objects kind management controls

   \+ : add an object

   \- : remove the selected object

   import : import an object

   export : export the selected object

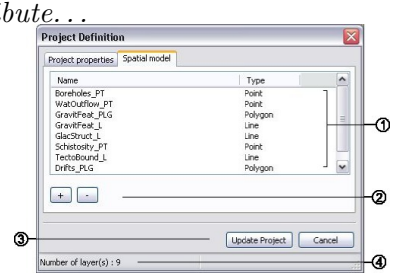
3. Save or cancel the objects modifications

4. Number of objects in the selected spatial type

5. Number of selected objects

3.4.3 Edit attributes

The attributes can be modified with the option *Project→Edit→Object Attribute...*



1. List of available layers, you can modify them by double-clicking on it

2. Objects management controls

   \+ :add a new layer

   \- : delete the selected layer

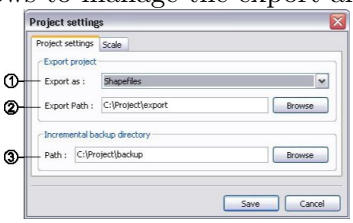
Update : update the project saving the modifications [Cancel]: Cancel the modifications

3. Number of available Layers

3.4.4 Settings

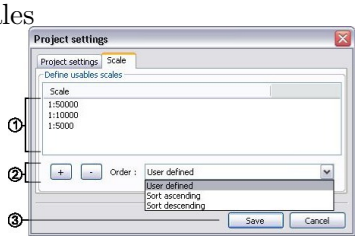
The settings edition is activated with the option *Project → Edit → Settings...*

Project Settings The project settings tab of the project settings window allows to manage the export and backup properties



1. Export data type (Shapefile, Graphics (EPS))
2. Export file path
3. Backup file directory

Scale The scale tab of the project settings window allows managing the scales



1. List of defined scales. Following operations can be realized in the list:
   - Edit a scale by double-clicking on it
   - reorganise the list of scales with the contextual menu
2. Scales management
   + : Add a new scale
   - : Delete one or several preselected scales. The suppression can also be made with the [Delete] or [Backspace] keys
   - Management options of the scales list. The list can be ordred with the options of the *order* drop-down menu
     - Sort ascending
     - Sort descending
     - User defined: Ordred by the user
3. Save or cancel the settings modifications

3.5 Save and restore a project

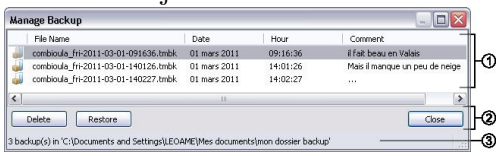
3.5.1 Backup

When working on ToolMap the changes are automatically and constantly saved. Because of that it is safe to create frequent backups of the project. The *Backup* function from the menu *Project* allows you to make backups of your current project.

At the creation of a backup, you can write a comment about your save.

The comment will appear in the *Manage Backup* window.

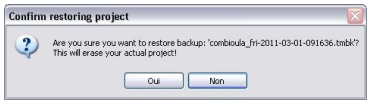
The *Manage Backup* window is accessible with the option *Manage backup* from the menu *Project*. This window lists all the backups stored in your backup file. The name of the backups is automatically generated following this model: Projectname-YYYY-MM-DD-HHMMSS



1. List of the backups with their characteristics and comment. The list can be ordred by each of the characteristics

2. Backups management controls

   - **Delete**: Delete the selected backup(s)
   - **Restore**: Restore the selected backup. When clicking on this option, a window asks you the confirmation of the restoration process.

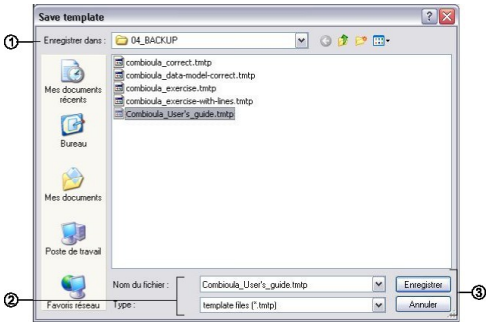
     
     Confirm restoring project
Are you sure you want to restore backup: 'combioula_fri-2011-03-01-091636.tmbk'?
This will erase your actual project!
Oui
Non

   - **Close**: Close the window and return to your current project

3. The Backup path (beforhand defined in the Settings)

3.5.2 Template

You can create templates of your project with the option *Save as template...* from the menu *Project*. The creation of a template is made as such:



1. Path where the template will be stored
2. Name of the template and the format
3. Save the template or cancel the operation

After saving your template you can enter a comment that will appear if you use the create from template option.

1. Comment on the template

3.6 Export a project

The exportation allows generating layers which were defined at the spatial model level in order to be used in others programs. The export path and format have to be beforehand defined (see chap. Settings)

The layers exportation can be made in two different ways:

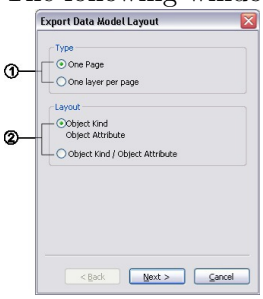
1. Export by layer (*Project→Export→Export layer...*); this option allows the user to select the layers to export.

2. Export the whole project (*Project→Export→Export project*); this second option allows exporting all the layers defined at the spatial model level.

3.6.1 Export Model as PDF

Once the spatial model of a project is set, you can get a PDF[1] layout of it using the Export Model as PDF[2] tool (*Project→Export→Export Model as PDF*[3]...).

The following window will then open :



1. Choose to either print your data model on a single page or with one layer only per page. The later allows you to choose between several paper sizes (from A0 to A4) and orientation (Portrait or Landscape).

2. Choose the layout of your datas. The upper option will display Object Attributes below the Objects Kinds, the lower option will display them next to each other.

Checking the "use very simple decorations" box in the next window will allow you to print a lighter version of the document.

3.7 Close the Project

To quit the project, you just have to click on the upper-right icon or select the option *Project → Exit*.

[1] Portable Document Format
[2] Portable Document Format
[3] Portable Document Format

Chapter 4

Spatial Data management

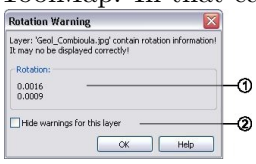
4.1 Add

The *Link Data...* option from the menu *Data* allows loading some support themes for the vectorization of the construction layers. Those support themes can be vector data (*.shp) or raster data (*.tif, *.JPG[1] and Esri's binary GRID).

In the opposite of the construction layers, the support themes are not stocked in the project but only referenced.

4.1.1 Rotation

Some of your files may have rotation information, which is not yet supported by ToolMap. In that case you will see the following message:



1. rotation information
2. display option

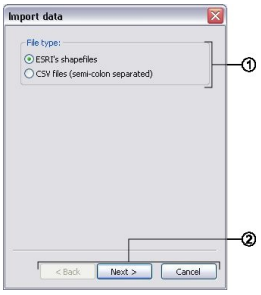
This message will pop up every time you make an action regarding the layer (including trivial actions like zoom or pan), so be sure to convert your images into non-rotated rasters. If the rotation is insignificant, you may prefer to simply ignore the message by checking the option **Hide warnings for this layer**. This option prevent the appearance of the message for the current session, but it will pop again the next time you launch your project.

[1] Joint Photographics Experts Group

4.2 Import

The *Import data...* option from the menu *Data* allows you to import some existing informations into your construction layers. You can only import lines or points geometries. The process is made in 3 different steps.

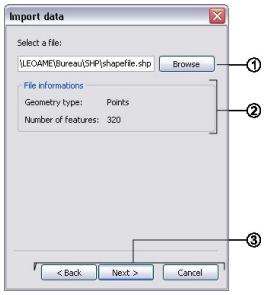
4.2.1 Step1



1. the *Import data...* option allows two types of data, choose the one you want to import
2. Go to the next step of the import or cancel the operation

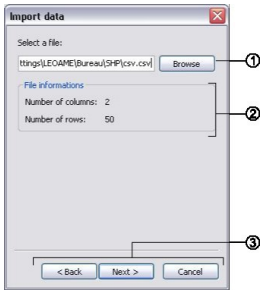
4.2.2 Step2

If you choose to add a shapefile the following step comes ahead



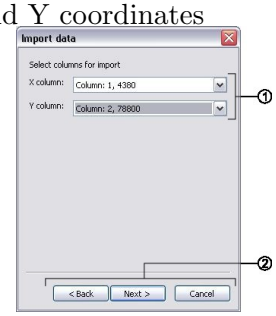
1. Directory path of the shapefile
2. data informations of the shapefile
3. allow to go back to step 1 or to continue to step 3

If you choose to add a CSV file the following step comes ahead



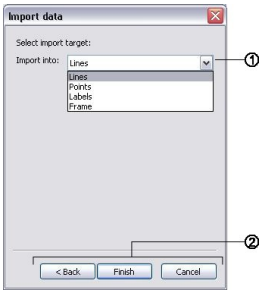
1. Directory path of the CSV file
2. Informations on the CSV file
3. allow to go back or to continue to step 2.2

Step2.2 The CSV files are composed of columns of data separated with commas, you will have to choose wich column you want to assign to the X and Y coordinates



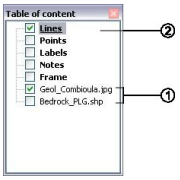
1. List of the columns wich can be assigned as X or Y coordinates
2. allows to go back or to continue to step 3

4.2.3 Step3



1. List of layers within the datas will be imported (with the shapefile import the choice is restricted to the geometrical type of the datas)
2. import the data or cancel the operation

4.3 Table of contents options



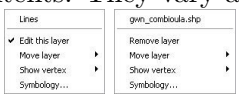
1. ☑: Activate the display of the layer

   ☐: Deactivate the display of the layer

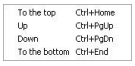
1. Edition mode activated: the layer is underlined

4.3.1 contextual menu

The contextual menus are opened by right-clicking on a layer of the table of contents. They vary according to the selected layer.



- Name of the layer
- Edit this layer(construction layers only) Remove layer(support themes only)
- Move the selected layer in the table of contents



- Display management of the vertex (line and polygon layers type only)
- Symbology management. This option can also be activated by double-clicking on the layer. (see chap. Symbology)

Chapter 5

Visualization

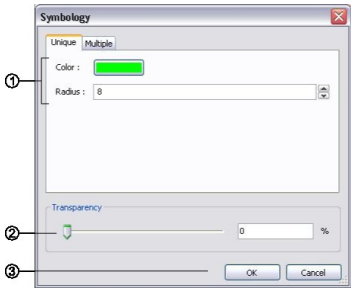
5.1 Menu view Options

- Previous zoom (<): go back to the previous displayed scale, available only if you have once changed the scale
- Zoom by rectangle: This tool uses a click-release action, click on the left button of the mouse and drag it, it makes a rectangular ghost. The zoom factor is inversely proportional to the size of the rectangle. The type of zoom is determined by the direction of the drag:
  - Left to right: zoom in
  - Right to left: zoom out
- Pan : Move the map with a drag and drop action
- Zoom to full extend: Adjust the scale to display all the activated layers
- zoom to layer: Adjust the scale to display the whole selected layer

5.2 Symbology

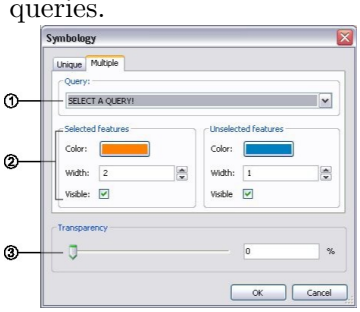
The symbology windows allow you to manage the style of each layer. You have several options available depending of the layer style. They are accessible by double clicking on the layer name in the table of content or with the option *Symbology...* of the contextual menu.

5.2.1 Points



1. Points style management: you can change the color and the radius of the points
2. Transparency management
3. Apply or cancel the modifications

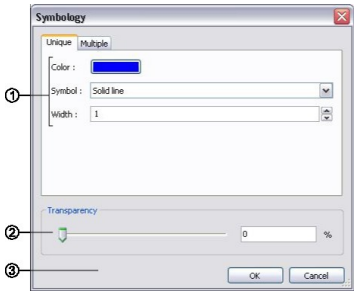
The points have an additional option found on the other tab of the window (*multiple*). Under this tab you are able to attribute two different symbology to your lines. The differenciation of the points is made through the queries.



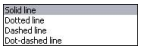
1. Query selected for the differenciation
2. symbology management of the two classes
3. transparency management

The symbology is directly connected to the attribution of the point, changing its attributes may instantly change its symbology. This option can be very helpfull to highlight specific classes.

5.2.2 Lines



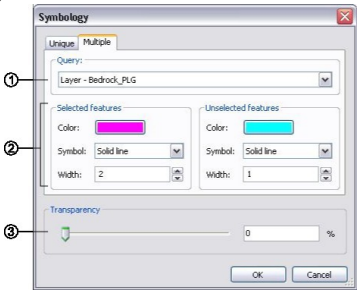
1. Lines style management, you can change the color the width and the symbol of the lines. There are four choices of shape



2. Transparency management

3. Apply or cancel the modifications

The lines have an additional option found on the other tab of the window (*multiple*). Under this tab you are able to attribute two different symbology to your lines. The differenciation of the lines is made through the queries.



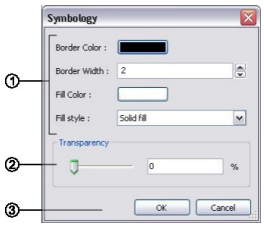
1. Query selected for the differenciation

2. symbology management of the two classes in this case the selected features are all the lines with the “Bedrock_PLG” attribution

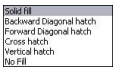
3. transparency management

The symbology is directly connected to the attribution of the line, changing its attributes may instantly change its symbology. This option can be very helpfull to highlight specific structures.

5.2.3 Polygons



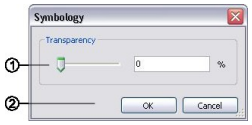
1. Polygons style management: you can change the border width and color as the fill color and style. There are few Styles available



2. Transparency management

3. Apply or cancel the modifications

5.2.4 Images



1. Transparency management

2. Apply or cancel the modifications

Chapter 6

Features Selection

6.1 Selection menu

The menu Selection regroups the following options:

- Select (**V**)
- Select by Feature ID...
- Clear Selection (**Ctrl+Alt+S**)
- Invert Selection

To select features you first have to activate the selection tool with:

- the menu Selection
- with the icone
- with the **V** shortcut

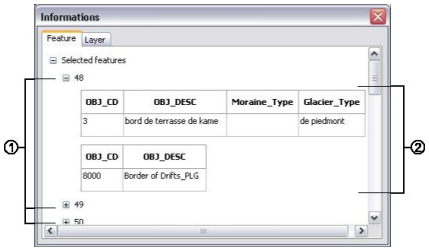
you can either make a simple or multiple selection.

- Single selection: just click on the object you want to select or select the object with its ID using the option *select by object ID...*
- Multiple selection: maintain the [SHIFT] key while clicking on the objects or create a rectangular gohst with your cursor, all the objects within the rectangle will be selected

6.2 Information window

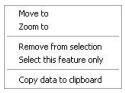
6.2.1 Feature tab

The information window is accessible with the menu *window* → *information window*. When selecting one or several features, it allows you to display the attributes of each selected feature.



1. Selected feature ID
2. Features type and attributes

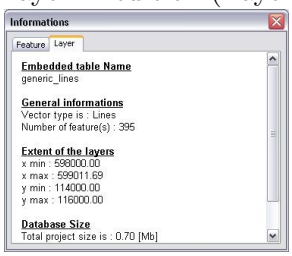
By right-clicking on a feature ID you can access to a contextual menu with the following operations.



- Move to: center the screen on the selected feature
- Zoom to: adjust the scale to display the selected feature on the whole screen. (this option does not work for the point type layers)
- Remove from selection: remove a feature from your selection
- Select this feature only: unselect all the other features in your selection
- Copy data to clipboard: copy the informations of the selected feature

6.2.2 Layer tab

The *Layer* tab of the Information window displays all the informations on the layer in edition (Layer of the selected features).



Chapter 7

Edition

7.1 Construction layers definition

The activation of the editing mode is made out of two steps:

- Select the layer to edit in the table of contents
- Activate the Edit Layer option in the pull-down menu

This operation activate the edition menu Remark: only one layer at once can be edited.

7.1.1 Edition menu

The *edition* menu regroups the following options:

Draw feature The draw tool allows creating new features

Point type layers

- Activate the tool, the edition cursor displays
- Vectorize the object with the mouse

Line type layers

- Activate the tool, the edition cursor displays
- Vectorize the object with the mouse, each left-click creates a vertex

- Cancel the last vertex of the segment in edition; *Remove last vertex*(**Ctrl+Z**) option of the *Edition* menu
- Finish the construction of the object with the **ENTER** or **TAB** key
- Cancel the segment in creation with the **ESC** key

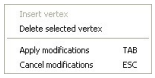
Modify feature The *modify* option allows modifying features.

Point type layers

- Select a point
- Activate the tool ; the modification cursor displays
- Modify the feature position with the cursor

Line type layers

- Select a line
- Activate the tool ; the modification cursor displays
- Modify the vertex position with the cursor by dragging it
- Cancel the modification of the current segment with the **ESC** key
- Apply the modifications with the **ENTER** or **TAB** keys
- Insert or delete a vertex with the contextual menu

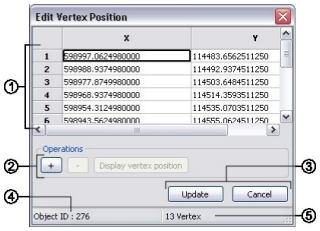


- Insert vertex (active when the cursor point on a segment of the line)
- Delete selected vertex (active when the cursor point on a vertex)
- Apply the modifications
- Cancel the modifications

Move shared node The *Move shared Node* allows to move a vertex which is assigned to more than one line. The point is to move a vertex by keeping the boundaries of every lines related to it. This tool is activated using the menu *Edition*→*Move shared node*(**Ctrl+T**) or using the corresponding button in the toolbar.

Edit Vertex Allows modifying the geographical coordinates of the vertexes.

- Select a feature
- activate the tool ; The following window pops up



1. Geographical coordinates of the vertexes defining the geometry of the feature
2. The coordinates can be directly edited in the table.

   \+ : add a new Vertex, the insertion is made after the current selection. The X,Y coordinates have to be edited. The insertion of a vertex without coordinates provoke an error message at the update of the geometry ([Update]).

   \- : suppression of the selected vertex.

Display Vertex : Visualization of the selected vertex.

3. Update or cancel the current modifications
4. Selected feature ID
5. Number of vertexes of the selected feature

Delete selected feature allows deleting the selected features

- Select the feature(s)
- Use the option *Delete selected feature* of the *Edit* menu or use the **DELETE** key

In the case of a multiple selection, a window appears asking a confirmation of the suppression.

Cut line The *cut lines* option allows cutting lines. The cut can only be done on a vertex.

- Select a line

- Activate the tool with the menu or with the shortcut (**Ctrl+X**) ; the tool cursor displays
- click on the vertex where the division must be done

The two lines will then have the attributes of the original line.

Merge Line Allows merging the selected lines. The selected lines have to be adjacent, the lines must have a begin/end vertex in common.

- Select lines
- Activate the tool : several cases are possible:
  1. Same attributes ⇒no consequencess
  2. Different attributes ⇒ the user has to define the attributes to keep
  3. 1 non attributed object ⇒ the user has to define the attributes to keep
  4. Same polarity ⇒ no consequences
  5. Different polarities ⇒ the polarity becomes left to right

Create intersection Allows creating intersections between lines which cross themselves. All the segments created will keep their previous attributes

- Select a line which cross another one
- Activate the tool

The tool won't cut the lines if they cross themselves on a vertex

Flip fline The *Flip line* option allows to reverse the polarity of the selected line. To check the polarity of the line you have to open the vertex editor(see Edit vertex and check the coordinates of the first vertex.

7.2 snapping

During the vectorisation of a point or line feature, the snapping function allows to hang on the nodes of an existing feature. The snapping can be done on the features of the active layer (i.e. current edition) and/or on features belonging to other layers (construction layers and vectorial support themes)

The snapping is defined by the following elements:

1. The capture tolerance of nodes: in edition, the tolerance zone is figured out with a circle on the screen
2. The involved classes
3. The constructions layers implicated. Vertexes and/or nodes from start and arrival. The activation or the deactivation is done by double-clicking on the corresponding element.
4. Snapping management controls

   \+ : add a snapping theme

   \- : delete a snapping theme. The suppression can also be made with the **DELETE** or **BACKSPACE** keys.

Clear Snapping : reinitialization

The **Space** key temporarily deactivates the snapping

Chapter 8

Attribution

The attribution function allows assigning descriptive properties to the selected feature or group of features. The descriptive properties of an object are defined by the following elements:

- The object kind
- The attributes bounded to the layer of the object

The access to the attribution functions is made with the menu *Attribution*

- Object kind
- Object Attribute (single feature)... (**Ctrl+A**)
- Object attribute (multiple features)... (**Ctrl+Alt+A**)
- Shortcut...

The attribution procedure is made according to two complementary modes:

- Basic attribution: allows to assign objects to features.
- Advanced attribution: allows to appoint the attributes of the related layer to the selected feature.

8.1 Basic attribution

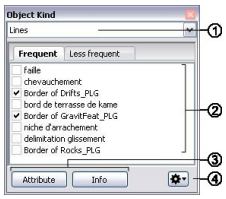
This mode of attribution is active with the *Object kind...* option of the menu *Attribution*. Once activated, the attribution is only effective for the construction layer in edition.

The possible values of attribution are determined by:

- The current construction layer

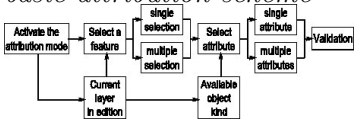
- The available object kind of the current layer

The attribution of objects to selected feature(s) is made with the management window in the attribution mode.



1. The current construction layer in edition
2. The list of objects related to the layer defined in (1). This list can be reordained using a contextual menu. The objects are distributed in two categories:
   - Frequent objects
   - Less frequent objects. The assignation of the objects to one or the other category is made at the level of the objects definition (cf. chap. Objects edition). The list is based on the marked spot principle and allows multiple choices.
3. The [Attribute] button allows validating the attribution of the selected features. The attribution procedure in basic mode is schematized by the following picture(basic attribution) The [Info] button allows displaying the attribute value(s) of the selected features(enable only for a single selection)
4. The Button allows selecting the following functions:
   - Enable full attribution: automatically open the advanced attribution after basic attribution.
   - Empty list after attribution: clear the list after the attribution of an object kind.
   - Enable auto display attributes: automatically displays the objects kind of the selected feature.

basic attribution scheme

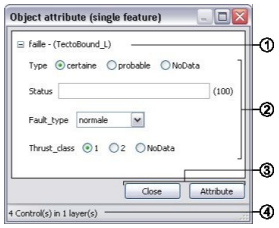


8.2 Advanced attribution

This mode of attribution is activated with the option *Object attributes...* of the *Attribution* menu or with the object attribute button of the toolbar. The constraints associated with this mode of attribution are the following:

- Is effective only for the current layer in edition
- Can be activated only if the selected element has already been basically attributed.
- Cannot be use in a multiple selection

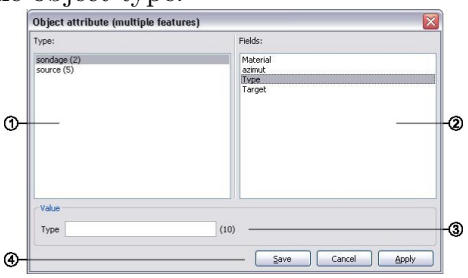
The advanced attribution of a feature is made with the management window activated by the option *Object attributes(single feature)...* This window is contextual and retakes the attributes and values of the layer.



1. Name of the Layer
2. Attributes
3. Save or Cancel the modifications
4. Number of attributes available

8.3 Advanced attribution batch

The *Object attribute(multiple features)...* option from the menu *Attribution* allows you to assign a same attribute to all the selected features having the same object type:



1. List of the objects kind corresponding to the selected features, the value in bracket indicates the number of selected features corresponding to the same kind.

2. List of the attributes corresponding to the selected object kind

3. Value of the selected attribute, the value can be a text, an integer, a float, a date or an enumeration type (in this case: a text). There you can assign the new value to all the selected and concerned features. Only one attribute can be edited at once, apply your modification before making another changes.

4. Attribution batch controls:

Save : save the modifications and close the window

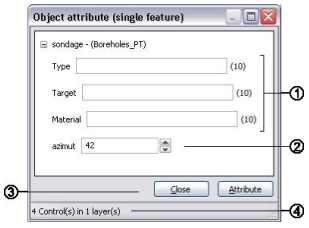
Cancel : cancel the modifications and close the window

Apply : apply the modifications without closing the window, a message appears to confirm the succeed of the operation.

8.4 Attribute orientation to point

In the case where the object can be oriented, you can give a feature an orientation. You have two ways to do it:

- From the advanced attribution window, just enter the value in the proper attribute.



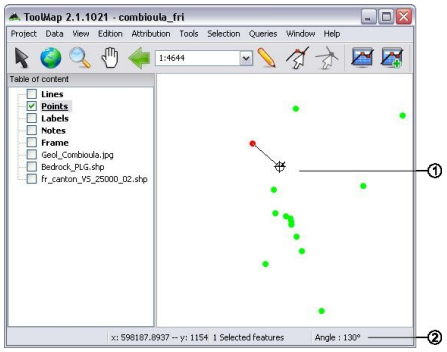
1. Some text attributes (the number in bracket is the maximal number of characters, this number is defined in the attributes properties)

2. The orientation attribute

3. Attribution controls

4. number of attributes available

- With the option *Set orientation (interactive mode)* (**CTRL+Y**) from the menu *Tools*, your cursor also change and you will be able to assign an orientation with a click-and-release action.



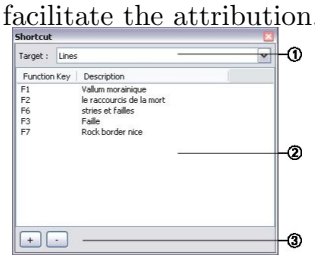
1. The orientation cursor
2. The orientation indicator

Once you have release the click, the value of the orientation indicator is attributed to the feature.

If you don't drag your cursor enough, an error message will pops up telling you that there isn't enough data to compute the orientation

8.5 Shortcuts

The *Shortcut...* option of the attribution menu allows to assign shortcuts to facilitate the attribution.



1. Drop-down menu allowing to select the construction layer which are assigned the shortcuts
2. List of the shortcuts and descriptions. Following operations can be realized in the list:
   - Edit the shortcuts characteristics by double-clicking on it
   - Reorganize the list of shortcuts with the contextual menu by right-clicking
3. List of shortcuts management controls

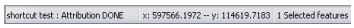
   \+ : add a shortcut

   \- : delete a shortcut. The suppression can also be made with the **DELETE** or **BACKSPACE** keys.

The shortcuts edition window looks like the following:

1. List of key functions available which can be assigned to a shortcut
2. Description of the shortcut
3. Object kind associated to the shortcut, the shortcut can attribute more than one object
4. Apply or Cancel the modifications

At the attribution with a shortcut, you have a message in the status bar wich confirms the attribution.



Chapter 9

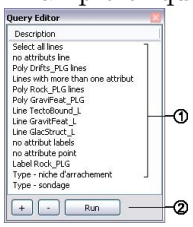
Validation

The validation allows verifying the geometrical and semantic meaning of the objects.

9.1 Semantic Validation

The *Queries editor* option of the *Queries* menu allows editing and executing queries.

Example of queries:



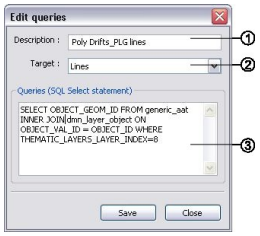
1. List of available queries. Following operations can be realized in the list:
   - Edit queries by double-clicking on it
   - Reorganize the list of queries with the contextual menu by right-clicking.
2. Queries management controls

   \+ : add a query

   \- : delete a query. The suppression can also be made with the **DELETE** or **BACKSPACE** keys.

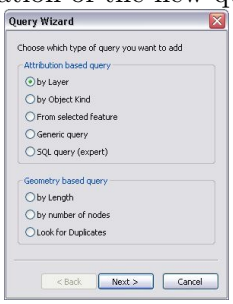
   Run : execute the selected query

The edition of a query is made with the following management window:



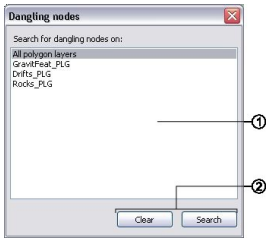
1. Query description
2. Construction layer on whom the query will be applied
3. Definition of the query in `SQL`[1] language

When adding a new query the query wizard guides you through the creation of the new query



9.2 Dangling nodes

The *Tools* menu includes the option *Search dangling nodes...* which allows to highlight the geometrical errors in the construction layers of polygonal type. The problematic nodes are identified with a red and white circle. The geometrical validation tool window looks like the following:

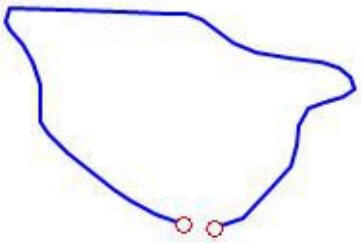


1. Research extent

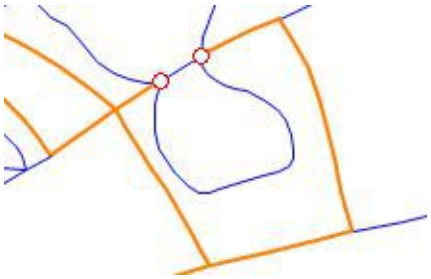
Search : search the errors [Clear]: clear the highlighting of the errors

There is basically two types of errors:

[1] Structured Query Language



Dangling nodes The polygon is not closed. The snapping option shall prevent this error.



Missing attribution The nodes are correctly snapped but the segment between the highlighted nodes is badly attributed, it shall have the same attribute as the orange lines.

Chapter 10

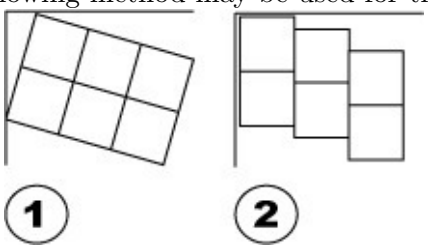
FAQ

10.1 Rotation Warning

10.1.1 Introduction

Some raster file have associated rotation information. This indicates that an appropriated rotation should be applied for the raster to be correctly displayed. ToolMap display a Warning when such files are encountered because displaying those files with rotations isn't supported yet.

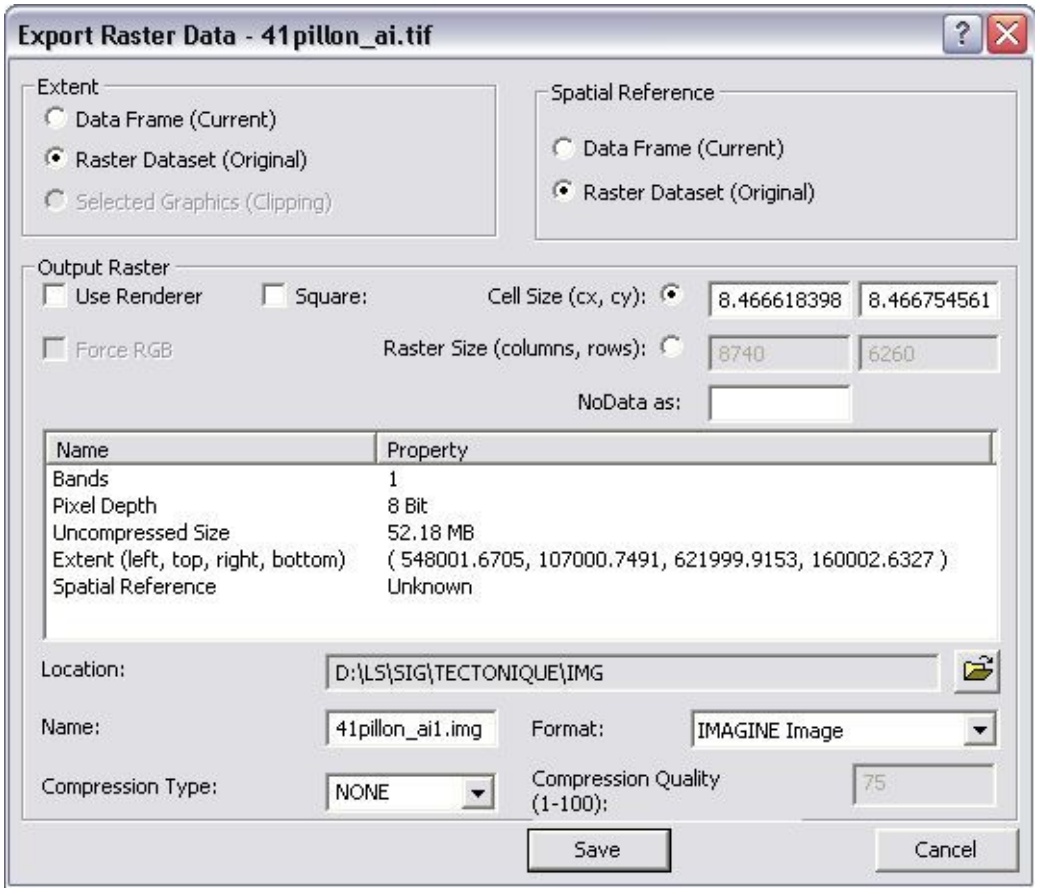
To still use those images we need to convert them into non rotated raster. Following method may be used for that purpose:



10.1.2 Using ArcGIS

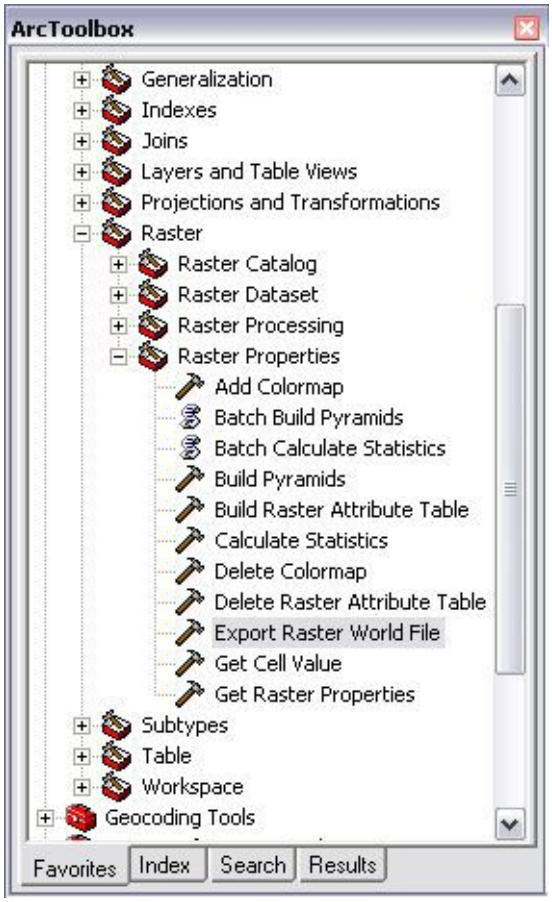
1. Load the raster
2. Right-click the raster name in the Table of contents
3. Choose Data → Export Data
4. Select the Location, file Format and file name
5. Press Save

The new raster is now correct and didn't contain anymore rotation information



10.1.3 Note about word files (tfw)

Since ArcGIS 9.2 no more word files (tfw) are written and the georeferencing information is now stored in a aux.xml file(see ESRI help: http://tinyurl.com/68ykjqu). It is however possible to manually create such word file using "Export Raster Word File" tool from the ArcToolBox


ArcToolbox
Generalization
Indexes
Joins
Layers and Table Views
Projections and Transformations
Raster
Raster Catalog
Raster Dataset
Raster Processing
Raster Properties
Add Colormap
Batch Build Pyramids
Batch Calculate Statistics
Build Pyramids
Build Raster Attribute Table
Calculate Statistics
Delete Colormap
Delete Raster Attribute Table
Export Raster World File
Get Cell Value
Get Raster Properties
Subtypes
Table
Workspace
Geocoding Tools
Favorites
Index
Search
Results